

REMARKS

The specification has been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. It is believed that this Amendment is fully responsive to the Office Action dated December 4, 2002.

Claim 4 stands rejected under 35 USC §112, first paragraph, for the specific reasons set forth in item 4, page 2 of the outstanding Action. The applicants respectfully request reconsideration of this rejection.

The applicants respectfully submit that the amendments to the specification and the submission of substitute Figure 12 obviate the outstanding rejection of claim 4. Specifically, substitute Figure 12 illustrates the claimed structural arrangement recited in claim 4. Accordingly, the withdrawal of the outstanding rejection under 35 USC §112, first paragraph, is in order, and is therefore respectfully solicited.

In response to the Examiner's outstanding objection to the drawings, the applicants have submitted herewith a Request for Approval of Substitute Sheets of Drawings containing substitute Figure 12 and Figures 13, 14 and 15 (originally Figures 12, 13 and 14, respectively).

The applicants respectfully request that the substitute sheets of drawings filed herewith be approved by the Examiner, and that the outstanding objection to the drawings be withdrawn.

As to the merits of this case, claim 3 is rejected under 35 USC §102(b) as being anticipated by Koepf (U. S. Patent No. 4,173,001). The applicants respectfully request reconsideration of this rejection.

The Examiner alleges that Koepf discloses a laser device 10 including an amplifying section 12 in which a laser medium is amplified to oscillate laser light, comprising a prism 44 (34) having a non-reflecting portion 46 which is provided on approximately a center portion and transmits the laser light at high transmissivity, and a total reflecting portion 43 which is provided outside a perimeter of the non-reflecting portion 46 and reflects the laser light at high reflectivity; wherein the prism 44 (34) separates part of the laser light oscillated in the amplifying section 12 and shapes a beam form of the laser light into a desired form to output the same. The Examiner refers to Figs. 1, 3, and 4 of Koepf.

With due respect to the Examiner, the applicants respectfully submit that the Examiner misinterprets the laser apparatus of Koepf as the alleged prism 44 (34) shown in Figs. 1, 3, and 4 of Koepf is disclosed in the specification of Koepf at column 5, lines 51 to 53, to be a dichroic coupling element (34) consisting of a reflector (44) having a central aperture (46) axially aligned with

reflectors (24) and (28). Koepf does not describe a prism having the non-reflective and total reflecting portions as defined in present claim 3.

The applicants' claimed invention, as set forth in claim 4, includes the structural arrangement, whereby the first prism 22A includes both the function of an ordinary prism and the function of an optical element for shaping a beam form of the laser light into a desired form, like the rear slit 17 in Figure 1, and that the non-refractive portion 28 of the prism 22A is not a void such as an opening 17A of the slit. Thus, the prism 22A prevents the disadvantage where a portion of the slit close to the opening 17A is heated so as to vary the gas refractivity; thereby, the wave surface of the laser light is disturbed (see, line 21, page 20 through line 19, page 21 of the applicants' specification).

For this reason, the applicants' instant claimed invention is distinguishable over the structural arrangement and function of a reflector 44, which has a coating 43 surrounding an aperture 46 as disclosed in Koepf.

Accordingly, since not all of the claimed elements are found in exactly the same situation and united in the same way to perform the identical function in the Koepf device, there can be no anticipation of the applicants' claimed invention based on the teachings of Koepf. Thus, the withdrawal of the outstanding anticipation rejection under 35 USC §102(b) based on Koepf (U. S.

U.S. Patent Application Serial No. **09/621,140**

Patent No. 4,173,001) is in order, and is therefore respectfully solicited.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

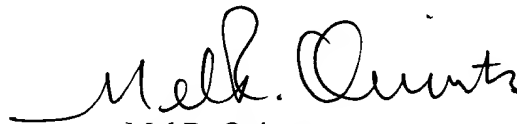
Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

U.S. Patent Application Serial No. 09/621,140

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP



Mel R. Quintos
Attorney for Applicants
Reg. No. 31,898

MRQ/lrj/ipc

Atty. Docket No. 000866
Suite 1000, 1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



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PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made
Request for Approval of Substitute Sheets of Drawings
Request for Approval of Drawing Corrections (Substitute FIG. 13)

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IN THE SPECIFICATION:

Amend the specification in its entirety as follows:

Paragraph beginning at page 1, line 11 has been amended as follows:

Conventionally, in a narrow band excimer laser device and fluorine laser device, a slit for shaping a sectional form of laser light into a predetermined form is known, and it is disclosed, for example, in Japanese Patent No. 2531788. FIG. [12] 13 shows a configuration of an excimer laser device according to the prior art. It should be noted that FIG. [12] 13 is made by being reversed horizontally relative to the drawing made in the aforementioned Patent. In FIG. [12] 13, the excimer laser device 1 is seen from above, and in the explanation hereinafter, an up and down direction of the paper surface of FIG. [12] 13 is called a lateral direction, and a direction vertical to the paper surface is called a vertical direction.

Paragraph bridging pages 1 and 2 (line 23, page 1 through line 6, page 2) has been amended as follows:

In FIG. [12] 13, an excimer laser device 1 includes a laser chamber 2 containing laser gas being a laser medium at a predetermined pressure ratio, and inside the laser chamber 2, discharge electrodes 5 and 5 are placed to oppose to each other in the aforementioned vertical direction. High voltage is applied across the aforementioned discharge electrodes 5 and 5 from a high voltage power supply not illustrated to initiate discharge, and thereby the laser medium is excited

in a discharge area 18 to oscillate laser light 11.

Paragraph beginning at page 2, line 7 has been amended as follows:

The laser light 11 excited in the laser chamber 2 is outputted from a rear window 9 toward the rear (the left side in FIG. [12] 13), and its bandwidth is narrowed by a grating 23 so that a spectrum width of the laser light 11 become narrow. The laser light 11 with its bandwidth being narrowed enters the laser chamber 2 again from the rear window 9, and it outputted from the excimer laser device 1 through a front window 7 and a front mirror 38 to become a light source for processing of a processing unit such as a stepper or the like not illustrated.

Paragraph beginning at page 3, line 19 has been amended as follows:

FIG. [13] 14 shows a view taken along the [13-13] 14-14 line in FIG. [12] 13. It should be noted that the aforementioned lateral direction is represented as the left and right direction in FIG. [13] 14. The illustration of the front window 7 is omitted. FIG. [14] 15 shows a detailed configuration of the area near the front and the rear windows 7 and 9 of the excimer laser device 1.

Paragraph bridging pages 3 and 4 (line 25, page 3 through line 6, page 4) has been amended as follows:

As shown in FIG. [13] 14, both the front opening 16A and the rear opening 17A according to the prior art are narrower than the discharge area 18 in which the laser medium is excited. As a result, even if the shape of the discharge area 18 is varied as a result of consumption of the discharge electrodes 5 and 5, the laser light 11 passing through the openings 16A and 17A can obtain a stable beam form.

Paragraph beginning at page 4, line 7 has been amended as follows:

However, as a result that the openings 16A and 17A are made narrower than the discharge area 18, as shown in FIG. [14] 15, surplus laser light 11A, which is oscillated at the outer peripheral side of the discharge area 18 than the openings 16A and 17A, is cut by the slits 16 and 17. Thus, out of the discharge energy inputted into the discharge area 18, a part of it becomes a loss such as heat or the like and is not taken out as the laser light 11, which causes the disadvantage of reducing the efficiency of the excimer laser device 1.

Paragraph bridging pages 4 and 5 (line 16, page 4 through line 1, page 5) has been amended as follows:

Further, as shown in FIG. [14] 15, the surplus laser light 11A is outputted to areas close to the openings 16A and 17A of the slits 16 and 17. Thus, the temperature in the areas close to

the openings 16A and 17A of the slits 16 and 17 rise and thereby refractive index of the gas inside the openings 16A and 17A is varied, thus causing the disadvantage of the wave surface of the laser light 11 being disturbed. Furthermore, heat occurs in the areas close to the openings 16A and 17A of the slits 16 and 17 causes the slits 16 and 17 to have heat, which causes the disadvantage that impurities occurring there stain and damage the other optical components.

Paragraph beginning at page 5, line 2 has been amended as follows:

Further, in the rear slit 17, as shown in FIG. [14] 15, the rear opening 17A is made smaller than the front opening 16A. Thereby, a part 11C of the laser light 11, which is partially reflected by the front mirror 38, passes through the front opening 16A, and returns to the discharge area 18, cannot pass through the rear opening 17A and is cut, thus further increasing the loss.

Page 11, between lines 4 and 5, the following paragraph has been inserted:

FIG. 12 is an explanatory view showing a configuration of an excimer laser device according to yet another embodiment;

Paragraph beginning at page 11, line 5 has been amended as follows:

FIG. [12] 13 is an explanatory view showing [an] a configuration of an excimer laser device according to a prior art;

Paragraph beginning at page 11, line 7 has been amended as follows:

FIG. [13] 14 is a view taken along the line [13-13] 14-14 in FIG [12] 13; and

Paragraph beginning at page 11, line 9 has been amended as follows:

FIG. [14] 15 is an explanatory view showing a detailed configuration of an area near a front and rear window in the excimer laser device in FIG. [12] 13.

Please insert a new paragraph at page 23, between lines 22 and 23 as follows:

In FIG. 12, the first prism 22A includes both the function of an ordinary prism and the function of an optical element for shaping a beam form of the laser light into a desired form, like the rear slit 17 in FIG. 1, and that the non-refractive portion 28 of the prism 22A is not a void such as an opening 17A of the slit. Thus, the prism 22A prevents the disadvantage where a portion of the slit close to the opening 17A is heated so as to vary the gas refractivity; thereby, the wave surface of the laser light is disturbed.